

Application No.: 10/669,713
Attorney Docket No.: 031212
Response under 37 CFR §1.116

REMARKS

Claims 1 and 3-5 are pending in the present application.

Claim Rejections - 35 U.S.C. § 103

Claims 1 and 3-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over **Hamrock** (US 6,063,522) in view of **Sano** (US 2002/0086191) and **Funatsu** (US 5,478,673). Favorable reconsideration is requested.

(1) Applicants respectfully submit that the present invention as recited in the claims would not have been obvious over Hamrock in view of Sano and Funatsu because it would not have been obvious to one of ordinary skill in the art at the time of the present invention to combine the teachings of Hamrock and Funatsu.

Hamrock discloses the need for secondary batteries which exhibit good cycling behavior at room temperature and elevated temperatures so that the electrochemical cell can be operated and maintained with minimal concerns for explosions caused by thermal runaway. (Col. 1, lines 41-65.) By contrast, Funatsu teaches improving discharge capacity during repeated charging and discharging procedures at temperatures lower than room temperature. (Col. 3, lines 7-20.) Since Hamrock concerns cycling behavior at room temperature and elevated temperatures and Funatsu teaches improving discharge capacity at temperatures lower than room temperature, it would not have been obvious to one of ordinary skill in the art to combine the teachings of Hamrock and Funatsu.

(2) Applicants respectfully submit that the present invention as recited in the claims would not have been obvious over Hamrock in view of Sano and Funatsu because the present invention as recited in the claims provides unexpected results over the cited references.

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Applicants previously stated that the amount of the main and subsidiary components in the solvent of the present invention as recited in claim 1 provides unexpected results. (Amendment, November 15, 2007.) In response, the Office Action stated that the evidence from the specification fails to demonstrate unexpected results; that there is no significant change in the trends of the data to demonstrate unexpected results; and that there is not enough data outside the claimed range of the main component. (Office Action, pages 5-7.)

Applicants have attached with this response, Table 1 and Graphs 1 and 2. The data used for these exhibits comes from Examples 1-8 and Comparative Example 5 of the present specification. In addition, the exhibits include additional Comparative Examples 6-8. Comparative Examples 6-8 include solvent ratios closer to the claimed range of ratios than in Example 5 to further support the demonstration of unexpected results of the claimed range. The solvent ratios for Comparative Examples 6-8 are 85:15 to 80:20 (main:subsidiary).

In the Comparative examples, the cell swelling is 2.51-3.25 mm. In the Examples which are within the claimed range, the cell swelling is significantly smaller (0.15-1.40 mm). Furthermore, while discharge capacities are 72-77 in the Comparative Examples, discharge capacities in the Examples are larger (82-103). The data is also shown in Graphs 1 and 2. Both Graphs show that the slopes of Comparative examples are mild and much less steep than those of the Examples, and thus, demonstrating the unexpected effect of the present invention as recited in the claims.

For at least the foregoing reasons, claims 1 and 3-5 are patentable over the cited references. Accordingly, withdrawal of the rejection of claims 1 and 3-5 is hereby solicited.

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In view of the above remarks, Applicants submit that the claims are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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AGM/adp

Attachments: Table 1
Graphs 1 and 2